different interconnection charges when dealing with different network operators. The dominant incumbent has an incentive to charge a higher interconnection charge to horizontally-related network operators (as well as to vertically-related networks). The principle of non-discrimination across network operators for the same service ensures that this horizontal price squeeze is costly to the dominant incumbent. It therefore does not have an incentive to use this strategy

- geographic de-averaging of interconnection charges ensures more efficient pricing across the many different geographic markets that exist in the telecommunications sector

B.46 Mandatory comprehensive disclosure by the dominant incumbent ensures that fellow network operators know sufficient information about the dominant incumbent to negotiate appropriate interconnection charges on the basis of these access pricing principles

Pricing at long-run average incremental cost (LRAIC)

B.47 The best option to maximise welfare is access pricing principles which both:

- place constraints on Telecom to ensure a level playing field between it and its competitors in setting access prices

- allow fellow network operators the freedom to negotiate mutually agreeable outcomes that satisfy those constraints

B.48 The Discussion Paper[56] says that LRAIC is "the [appropriate] lower bound on access prices." This is an example of a useful access pricing principle, namely that access and final services are never priced below average incremental costs.

B.49 Another helpful access pricing principle is that, whenever the firm breaks even, and only then, access and final services should not be priced higher than the stand-alone cost. Whenever the firm breaks even, and only then, these two access pricing principles together ensure that there is no subsidy from one service to another service. These access pricing principles do not, however, provide guidance on how each of the access and final services should deviate from average incremental cost. Actual historical and book value costs are irrelevant.

B.50 Demand for access services will vary over time, from both Telecom and its competitors. Furthermore, large portions of investment in the local loop are "sunk" since, at least over the near term, the facilities are immobile and specialised to their designed function. Because the capacity of access facilities is fixed, short-run AIC will at times be quite small, making no contribution to fixed costs, much less towards Telecom's common costs. Capacity of this sort, however, arrives in rather large "lumps". Therefore, excess capacity is the rule rather than the exception. Consequently, charges for access services should include an amount that reflects the cost of capacity expansion that is advanced as a result of growing demand (a so-

56 See paragraph 10 of Appendix D to the Discussion Paper.

called "shadow cost"). For this reason, LRAIC is a reasonable approximation to the direct incremental costs in the very short run. Economic efficiency implies that the appropriate costs are forward-looking costs rather than historical costs.

B.51 However, policy makers cannot rely on cost information provided by Telecom to compute LRAIC:

- first, Telecom has an incentive to "cost shift" by moving expenses to access categories away from other services on the ground that a wide range of possible cost allocations can be argued in the light of the fact that these services are typically provided over joint facilities. Nevertheless, the Ramsey pricing rule is the most effective allocation

- secondly, Telecom has an incentive to report LRAIC based on historical costs the appropriate way to measure costs is forward looking and Telecom's reported LRAIC will therefore perpetuate a cost structure that reflects any past inefficient investment decisions that it made. For this reason, engineering process models should be used to project future costs of access using the available technology most likely to be used - whether or not that is the current technology used by Telecom

B.52 Moreover, LRAIC can facilitate price discrimination on Telecom's part. In particular, Telecom can today charge fellow network operators different access prices claiming that LRAIC differed among them. Unless constant returns to scale prevail in the provision of access services, there should intuitively be some variation in LRAIC of access based on the size of the network operator. Efficiency would then imply volume discounts. These discounts are a form of price discrimination.

Characteristics of interconnection prices - non-linear usage-based, peak load and other forms of capacity-based pricing

B.53 Capacity-based and usage-based charging are two-dimensional access pricing principles which must be taken into account in order to achieve efficient pricing. One example is to consider the ability of network operators to make use of complementary network facilities at off-peak hours.

B.54 Non-linear usage pricing corresponds to the network operator charging its customer a unit charge which varies with the level of usage. Non-linear pricing is prevalent in telecommunications where discounts are even provided to residential and small business subscribers. Telecom offers its subscribers non-linear tariffs.

B.55 Telecom does not offer BellSouth non-linear interconnection charges. The interconnection charges BellSouth must pay Telecom are linear, i.e., BellSouth pays Telecom a fixed rate per minute regardless of the traffic it generates. BellSouth does not benefit from any of Telecom's price discounts for large levels of usage even though those discounts are routinely granted by Telecom to its large subscribers.

B.56 This is true in spite of the fact that BellSouth provides Telecom with more information regarding its traffic when it provides detailed and regularly updated traffic forecasts than do Telecom's large business clients.

B.57 Capacity-based pricing corresponds to a situation where BellSouth would commit itself to pay a flat fee in exchange for which it could send as much traffic as it wants up to the peak level it has contracted for without paying any usage charge. It would provide BellSouth with an incentive towards greater efficiency in as much as off-peak traffic would not affect the flat fee. BellSouth could, potentially, be worse off whenever either its peak traffic falls below the peak it has contracted for in as much as it is paying for capacity it is not using. BellSouth could also end up worse off if its traffic peak is higher than what it has contracted for. Under these circumstances, BellSouth and Telecom might have agreed that Telecom would take some or all overflow traffic. This would presumably be conditional upon BellSouth paying a relatively high usage rate on overflow traffic.

B.58 Telecom provides large business customers complex contracts typically tailored to the latter's requirements. They tend to reflect the customer's traffic pattern together with an option for the subscriber to bear some or all of the risk associated with blocking. In countries where there is substantial competition, those contracts offer deep discounts relative to commercial rates.

B.59 Where markets are perfect and result in efficient outcomes and both buyers and sellers each form a homogeneous population, risk would be a dimension of the commodity traded and one would expect to achieve an interconnection price partially capacity-based partially usage-based. Market players must be characterised by their attitude to risk (risk-prone v. risk-adverse) which translates itself in their willingness to pay to lower the risk level.

B.60 Whenever buyers are more risk adverse than sellers, privately-negotiated interconnection charges would, in the absence of dominance, be primarily usage-based. On the other hand, where they are less risk adverse, the pricing structure would be predominantly capacity-based.

B.61 Where the players are risk-neutral, one expects asymmetry in the information available to the players with the entrants better able to forecast their traffic, i.e., seeking to pay for a larger proportion of their traffic through capacity-based pricing.

B.62 BellSouth has commissioned further economic research in order that policy making will be even better informed. This research will be made available to officials as soon as it is available.

APPENDIX C

The Baumol-Willig rule is not an appropriate access pricing rule

The Discussion Paper

C.1 The Discussion Paper[57] defines the Baumol-Willig rule in the following terms:

> a firm seeking access should pay the incumbent a sum sufficient to compensate it for the opportunity cost of customers lost to the entrant including its foregone profits, if any.

C.2 The Discussion Paper[58] says that many of the criticisms of the Baumol-Willig rule "are due to misunderstandings of the rule itself, or misapplications of the rule in a particular contexts". The Discussion Paper therefore focuses primarily on:

- the ability of the Baumol-Willig rule to restrict inefficient entry into the market
- the ability of the Baumol-Willig rule to enable the competing away of monopoly rents

In practice, the Baumol-Willig rule will almost never achieve these objectives.

C.3 In summary, the Discussion Paper[59] says that the Baumol-Willig rule:

> was solely designed to achieve the goal of productive efficiency. In the simplest, static and no-uncertainty context, the rule achieves this goal. However, if other factors are introduced, such as uncertainty and sunk costs, or if the dynamic benefits of competition are considered, the BW rule may, in fact, deter efficient entry.

C.4 However, the Discussion Paper[60] says that the Baumol-Willig rule:

> has the advantage of being minimally invasive of the incumbent's property rights and permits recovery of the costs of social obligations (such as the Kiwi Share) without explicit quantification of those costs. However, the BW [rule] does not achieve and was not designed to achieve...allocative efficiency. To the extent that the competitor is more efficient than the incumbent in the downstream market, there will be some downward movement of final prices. However, it is likely to be limited and, in any event, will not restrain the ability of the incumbent to charge monopoly rents on the natural monopoly portion of the business.

The Baumol-Willig rule perpetuates inefficiency in the telecommunications sector in New Zealand

C.5 The Baumol-Willig rule perpetuates inefficiency in the telecommunications sector in New Zealand. In particular:

- the Baumol-Willig rule creates very significant allocative and dynamic inefficiencies

57 See paragraph 100 of the Discussion Paper.
58 See paragraph 102 of the Discussion Paper.
59 See paragraph 124 of the Discussion Paper.
60 See paragraph 125 of the Discussion Paper.

- the Baumol-Willig rule sacrifices long-run benefits of competition by excluding entrants
- the Baumol-Willig rule is not designed to collect contributions to defray a revenue shortfall
- the Baumol-Willig rule is insensitive to local market conditions
- it is not necessary to use the Baumol-Willig rule to recover the so-called costs of Telecom's agreement with its shareholder to restrict residential tariffs
- the Baumol-Willig rule is not immune to the problems which may arise in finding and applying average incremental cost

C.6 When an entrant or rival and a bottleneck monopolist both produce a complementary component to the bottleneck service, the Baumol-Willig rule specifies that the access charge paid by the entrant or rival to the monopolist should be equal to the monopolist's opportunity costs of providing access, including any forgone revenues from a concomitant reduction in the monopolist's sales of the complementary component.

C.7 The Baumol-Willig rule has a superficially seductive logic. Its very strong assumptions ensure that an entrant or rival producer of the complementary component can provide a service only if it is at least as efficient as the monopolist in the production of the complementary component. That is, the Baumol-Willig rule ensures that production will not be diverted to an inefficient producer.

C.8 However, the Baumol-Willig rule holds as a first-best pricing principle (i.e., it maximises social welfare) in a *static world only if a stringent set of assumptions hold.*[61] These assumptions are:

- the monopolist's price for the complementary service is based on a marginal cost pricing rule
- the monopolist's and entrant or rival producer's components are perfect substitutes
- the production technology of the component experiences constant returns to scale
- the entrant or rival producer has no market power
- the monopolist's marginal cost (or average incremental cost) of production of the component can be accurately observed

61 See Economides and White (1995); Laffont and Tirole (1994).

- the quantity demanded of the complementary service is left unchanged by entry

C.9 *If any of these assumptions does not hold, the Baumol-Willig rule will lead to allocative and dynamic inefficiencies which can be very significant.* In particular, when the monopolist which controls the bottleneck facility does not price at marginal cost (the first assumption is violated), the Baumol-Willig rule leads to a perpetuation of high prices for end-to-end services. Because the dominant incumbent will price above its marginal cost, the Baumol-Willig rule in the telecommunications market in New Zealand is not an appropriate access pricing principle. This conclusion is based on the following theoretical and empirical observations:

- it is well established by economic theory, as well as by empirical observation, that a monopolist which is not restrained by regulation or competition law will use its ability to price above marginal cost. The monopolist holder of a bottleneck facility is no exception. It will price its output above cost and so reap supernormal (monopoly) profits

- while the use of monopoly power and pricing above marginal cost are each a natural and expected behaviour by a monopolist, neither can be easily ascertained by observation of its accounts. It is well understood that items which appear as profits to competitive firms often instead appear as costs in the accounts of a monopolist

- accordingly, the crucial issue on the appropriateness of the Baumol-Willig rule is not the appearance of accounting profits but rather the determination of the ability of the bottleneck monopolist to price above marginal cost

- in New Zealand, there is no doubt that Telecom is a dominant firm and is able to price above marginal cost. This is expressly made clear by the Privy Council in *Telecom v Clear*. Moreover, in New Zealand, legal restraints on monopoly behaviour are weak. Accordingly, the telecommunications sector in New Zealand is an industry where the Baumol-Willig rule is an *inappropriate* access pricing principle. The Baumol-Willig rule in New Zealand leads to significant losses in efficiency

C.10 The application of the Baumol-Willig rule in industries that do not meet the very stringent requirements set out in paragraph C.8 is likely to lead to very significant allocative inefficiency. In particular, the application of the Baumol-Willig rule by the dominant incumbent monopolist, even when combined with free entry in the complementary good market, is likely to lead to prices of end-to-end services that exceed marginal cost. Accordingly, consumers who would have been served in a competitive market are, under the Baumol-Willig rule, excluded from the market because of the high price. This results in significant allocative inefficiency.

C.11 Entrants in the complementary good market that are equally efficient or more efficient than the incumbent will not be discouraged from entering through the application of the Baumol-Willig rule. Accordingly, where there are more efficient or equally efficient potential entrants, the application of the Baumol-Willig rule results in a pure allocative loss.

C.12 Even if the potential entrant in the complementary good market is less efficient than the monopolist, the Baumol-Willig rule often leads to efficiency losses. Economides and White (1995) show that the exclusion of inefficient rivals through the use of the Baumol-Willig rule may be socially harmful. This is because the market presence of even one inefficient rival could bring net social benefits by causing the price to fall sufficiently so that the net gain to consumers (the reduction in the deadweight loss "triangle") would exceed the inefficiency costs of the rival's production.

C.13 When the technology of production involves increasing returns to sale, which is the typical case in telecommunications, a monopolist may use the Baumol-Willig rule to exclude or marginalise a more efficient rival. The monopolist uses the Baumol-Willig rule to establish high interconnection charges that result in a restriction of the scale of operation of the rival in the complementary market. Because of the existence of increasing returns to scale, the rival ends up operating at the high end of its cost curve. The dominant incumbent is able to raise the production costs of its rival through the implementation of the Baumol-Willig rule. Accordingly, the rival is hurt by the Baumol-Willig rule twice:

- first, because of high interconnection charges
- secondly, because it is forced to operate at small scale and at high cost

C.14 The Baumol-Willig rule can thus be used to implement a tight profit squeeze on a rival or even to exclude the rival. In this process, consumers are deprived of lower prices that would have resulted from competition in the absence of the Baumol-Willig rule.

C.15 The monopolist has an incentive to understate its marginal costs of production of the complementary component (i.e., the service where it faces competition) and then employ the Baumol-Willig rule to levy an exclusionary access charge vis-a-vis its rival. The effects of this strategy are similar to the ones described in paragraph C.13. That is, more efficient rivals are excluded.

C.16 If the monopolist is constrained to earn zero profits in the bottleneck market, and if its costs are not perfectly observed, it can claim that some marginal costs of the complementary services are marginal costs of the bottleneck service. Lower marginal costs of the complementary component justify a higher charge under the Baumol-Willig rule. This higher charge will now deter even those rivals that are more efficient than the monopolist in the production of the complementary component.

C.17 *The Baumol-Willig rule reduces competition in markets that are both vertically-related and horizontally-related to the bottleneck monopolist.* By requiring any interconnecting network to pay high access charges, the Baumol-Willig rule ensures a reduced impact of competition in any market that is vertically related to the bottleneck monopoly (i.e., any market that provides goods or components that are complementary to the service for the bottleneck monopolist). Accordingly, since long distance providers have to interconnect with the bottleneck monopolist in the local market, the application of the Baumol-Willig rule by the bottleneck monopolist reduces the impact of competition in the long distance market.

C.18 Moreover, a *local* competitor of the bottleneck monopolist is harmed by the application of the Baumol-Willig rule. A competitor of the dominant incumbent monopolist which provides local service in some regions or which provides mobile service (a substitute to fixed local service) requires interconnection to the local network of the monopolist. Since the component of final service provided by the competitor is complementary to the component of the final service provided by the owner of the bottleneck facility, the two firms, monopolist and competitor, are vertically related. At the same time, the competitor may be seeking actively to win subscribers over to its network. It is thus in direct competition with the dominant incumbent monopolist. The Baumol-Willig rule justifies to the monopolist high interconnection charges that lead to a marginalisation of the competitor (through a price squeeze). The Baumol-Willig rule therefore reduces horizontal competition.

C.19 Therefore, *the Baumol-Willig rule effectively prohibits competition in the bottleneck market*. Often, a bottleneck market is described as a natural monopoly. The Baumol-Willig rule makes the bottleneck market a *legal monopoly*, irrespective of whether or not it is a natural monopoly. When the Baumol-Willig rule is applied, the possibility of competition into the bottleneck market is eliminated. This is because a potential entrant in this market must pay to the dominant incumbent its full opportunity cost. Accordingly, the application of the Baumol-Willig rule can lead to horizontal exclusion.

C.20 A fundamental confusion exists in the Privy Council decision between actual costs, opportunity costs and social costs. The Baumol-Willig rule is based on the sum of the actual and opportunity costs of the dominant incumbent monopolist. These opportunity costs are not actual costs. Opportunity costs can be substantial. They imply a high interconnection charge even if there is no "common cost" of the dominant incumbent. In general, private opportunity costs are not social opportunity costs. They do not reflect overall allocative efficiency.

C.21 In summary, therefore, the Baumol-Willig rule affects adversely competition in both horizontally-related and vertically-related markets (with respect to the bottleneck monopoly). The Baumol-Willig rule perpetuates the monopoly of a dominant incumbent such as Telecom resulting in:

- significant reduction of competition
- loss of allocative and dynamic efficiency
- high prices
- reduction of production

The Baumol-Willig rule sacrifices long-run benefits of competition by excluding entrants

C.22 The Baumol-Willig rule can exclude entry by competitors that have higher costs than the dominant incumbent, as well as entry by competitors that have lower costs. Exclusion of either kind of entrant can cause economic loss. Clearly, by excluding entry of innovative entrants, an economy forgoes the provision of the service at a lower cost or the provision of an improved service. Forgone opportunities are also

possible when less efficient rivals are foreclosed. Even though an entrant has somewhat higher costs than the dominant incumbent, it will apply downward pressure on prices, to the benefit of users.

C.23 However, the full benefits of competition will be realised only if entrants achieve a sufficiently large market share. Otherwise, a dominant incumbent of the relative size of a Telecom has no incentive to cut prices appreciably. By cutting prices, it forfeits revenue on sales across its entire customer base. Price competition is therefore more intense when firms are more comparable in size.

C.24 The importance of a "balanced" industry structure was recognised by the Privy Council when it offered its test for abuse of a dominant position ([1995] 1 NZLR 385, 403):

> it cannot be said that a person in a dominant market position "uses" that position for the purpose of s 36 unless he acts in a way which a person not in a dominant position but otherwise in the same circumstances would have acted

C.25 If Telecom sets interconnection prices as if it shared the market with its competitors, then those competitors would be able to compete for the market. The price competition that would ensue would benefit end users.

C.26 By its nature, the Baumol-Willig rule perpetuates the monopoly profits that a dominant incumbent enjoys. Accordingly, the Baumol-Willig rule transforms the temporal gain of a dominant incumbent into a permanent and recurring gain. *In this way, the Baumol-Willig rule does exactly the opposite of what competition is supposed to accomplish: the Baumol-Willig rule keeps prices and profits high. Instead of squeezing out monopoly profits, the Baumol-Willig rule prevents competition from squeezing them out.*

C.27 The Discussion Paper has and other government reports have extolled the benefits of innovations such as the introduction of Centrex by Clear. But Clear was delayed by Telecom in its ability to offer this particular innovation up to the time when Telecom itself was in a position also to offer it. This two years' delay therefore lead to welfare losses. But these benefits are threatened by interconnection charges that are based on the Baumol-Willig rule. New entrants will bring improved technologies and enhanced services to the market. But this does not mean that new entrants should receive so-called "infant industry protection". Entrants are capable of competing with Telecom using superior products and processes. But to do so, entrants must be able to purchase access on economic terms.

C.28 The Baumol-Willig rule creates incentives for the entrant to reduce costs. But the Baumol-Willig rule gives no incentives to the dominant incumbent to innovate. By limiting competition and by perpetuating monopoly, the Baumol-Willig rule limits the possibility of change in the telecommunications sector.

C.29 Under the Baumol-Willig rule, the dominant incumbent earns the same revenue irrespective of who carries the call in the "competitive" section of the market. Accordingly, the dominant incumbent has an incentive to delegate this function to a more efficient competitor and the entrant has an incentive to be efficient in the "competitive" section of the market. That is, the dominant incumbent has no incentive to be efficient in the "competitive" section of the market. Also, the Baumol-Willig rule

implies that the final price for end-to-end services will be relatively high. Thus, under the Baumol-Willig rule, some services (which, in the absence of the Baumol-Willig rule would be viable and socially desirable) will have to be offered at prohibitive prices. Those services will not survive. At the same time, the Baumol-Willig rule gives incentives for the incumbent to provide new services pre-emptively, so as to be able to earn the profits implied by the Baumol-Willig rule. In simple terms, the dominant incumbent has no incentive to innovate itself.

The Baumol-Willig rule is not designed to collect contributions to defray a revenue shortfall

C.30 The Baumol-Willig rule was designed to discourage entry by inefficient competitors. In reality, it is more likely to generate a surplus for the incumbent - especially if monopoly profits are included through opportunity costs. But this surplus defrays losses that the dominant incumbent experiences in some markets. Yet this is not the purpose of the Baumol-Willig rule. Moreover, there are elegant solutions to these sorts of problems. For example, the Ramsey pricing rule is specifically designed to collect joint and common costs to minimise the welfare losses of having prices depart from marginal costs.

C.31 In general, prices implied by the Baumol-Willig rule differ from Ramsey prices. As a result, the use of the Baumol-Willig rule to collect any contribution to Telecom's joint and common costs (together with contributions to cover the so-called Kiwi Share "obligation") will further drive prices away from efficient levels. The actual size of the efficiency losses that will occur as a result of the Baumol-Willig rule still need to be quantified.

The Baumol-Willig rule is insensitive to local market conditions

C.32 The Baumol-Willig rule is insensitive to local market conditions. The form of the Baumol-Willig rule adopted by the Privy Council assumes a high level of geographic and customer class averaging. In general, average incremental cost as well as opportunity cost will vary across regions in groups of customers. Opportunity costs vary with the demand for various telecommunications services by different groups of consumers who have different demand characteristics (such as elasticities). Opportunity costs also vary according to demand at different times of day. Any serious attempt to implement the Baumol-Willig rule must give different component charges for each stratified class of consumers in each region and at different times of the day.

C.33 If the Baumol-Willig rule is applied as a single charge across regions and classes of customers, it will result in acute distributional effects across consumer classes and regions. Rural consumers, regardless of their ability to pay, will be subsidised by poor urban consumers.

C.34 Therefore, a single Baumol-Willig rule charge across classes of consumers and regions creates further significant allocative distortions. These distortions result in the wrong signals being sent to potential entrants. Entrants will not enter in the appropriate markets and will instead enter in the "wrong" markets.

It is not necessary to use the Baumol-Willig rule to recover cost of Telecom's agreement with its shareholder to restrict residential tariffs

C.35 It is not necessary to use the Baumol-Willig rule to recover the costs of Telecom's agreement with its shareholder to restrict residential tariffs. The Discussion Paper[62] incorrectly states that:

> One of the advantages of the BW rule...[is] that it permits the recovery of a contribution towards the cost of the Kiwi Share without requiring these to be separately estimated and verified.

C.36 It is not clear if the Baumol-Willig rule recovers more or less than what is necessary for the so-called "obligation" of Telecom's agreement with its shareholder to restrict residential tariffs (on the assumption, which is as yet untested (because the current disclosure regime is inadequate to enable fellow network operators to observe the relevant "costs"), that the so-called "obligation"of Telecom's agreement with its shareholder to restrict residential tariffs is a cost to Telecom).

C.37 Also, the Baumol-Willig rule does not "recover" costs from the "right" customers. The Baumol-Willig rule implies a high interconnection charge across all services. Therefore, all customers pay for the so-called Kiwi Share "obligation" rather than those who should pay because their fixed connections are more costly. The so-called "obligation" of Telecom's agreement with its shareholder to restrict residential tariffs arises from the actual costs of connecting some (rural) customers that are higher than the actual costs of connecting urban customers. An efficient method to recover any implied loss is to charge these specific (rural) customers more. If this is done through higher interconnection charges, these charges should apply to those particular customers who create the so-called "obligation". Other customers should not be charged more for interconnection.

C.38 Moreover, as stated above, the Baumol-Willig rule (which recovers opportunity and not actual costs) is not an appropriate method to recover actual costs.

The Baumol-Willig rule is not immune to the problems which may arise in finding and applying average incremental cost

C.39 Since the Baumol-Willig rule is based on average incremental cost plus opportunity cost, it is not immune to the problems that may arise in finding and applying average incremental cost. The discussion in Appendix B of these Submissions on average incremental cost notes that there is a difficulty in measuring average incremental cost when cost information must be provided by Telecom itself. Telecom has an incentive to shift costs to increase the average incremental costs of access. Telecom can also do so by using its historical cost rather than forward-looking costs.

62 See paragraph 146 of the Discussion Paper.

APPENDIX D

Telecom's agreement with its shareholder to restrict residential tariffs

Nature of the issues

D.1 This Appendix considers a number of issues which arise out of Telecom's agreement with its shareholder to restrict residential tariffs. In broad terms, those issues are:

- whether this agreement is in fact an "obligation"
- the need to subject Telecom as the party bound by this agreement to a mandatory comprehensive disclosure regime to enable the net costs, if any, of this agreement to be recovered

The Discussion Paper

D.2 The Discussion Paper[63] states that the:

> Government is committed as a matter of policy to the principle of the Kiwi Share. This document does not question the continued existence of the Kiwi Share.

D.3 Clearly the Government is committed to this policy at this stage. Whether or not it is meeting the objectives which led to the agreement between the Government and Telecom to restrict residential tariffs is, however, unknown until an effective disclosure regime is imposed on Telecom as the party which has to implement this agreement.

Information asymmetry impedes competition developing

D.4 Telecom's assertions that its agreement with its shareholder to restrict residential tariffs is in fact an obligation have not been demonstrated. Other network operators suffer a significant information disadvantage in relation to this agreement despite Telecom's contention that the costs associated with it be allocated among residential service providers.

D.5 *If this agreement is indeed an "obligation", then Telecom must fairly and reasonably be required to disclose the costs that Telecom itself would have to know if it was competing on a stand-alone basis.* Therefore, inherent in Telecom's agreement with its shareholder to restrict residential tariffs is an obligation on Telecom to disclose fairly and reasonably the real extent and basis of the obligation, if it is seeking contributions to what is its own contractual commitment to Government.

D.6 For example, Telecom has an incentive to understate, for example, its marginal costs of production in its competitive markets and then employ the Baumol-Willig rule to charge an exclusionary interconnection charge vis-a-vis another fellow network operator. This strategy can lead to the exclusion of more efficient rivals.

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63 See paragraph 142 of the Discussion Paper.

D.7 It is for this reason that the statement in the Discussion Paper[64] that the Baumol-Willig rule is free of separate estimation and verification problems is incorrect. Since the Baumol-Willig rule is derived by subtracting the incremental cost from the retail price, implementation requires a valid estimate of the incremental cost of production. Since the Baumol-Willig rule is set as a residual, Telecom has an economic incentive to understate the incremental cost of providing service. The lower the reported incremental cost, the higher the contribution that must be paid by connecting firms. Further, as discussed in Appendix C to these Submissions, the Baumol-Willig rule requires a finding that the revenues collected are below the stand-alone cost of production. For both reasons, use of the Baumol-Willig rule does not eliminate the need for undertaking an estimation of the economic cost of production.

D.8 Moreover, if Telecom is constrained to earn zero profits in markets where it has monopoly power, and if its costs are not perfectly observed, it can claim that some marginal costs of its competitive services are marginal costs of the monopoly market. Lower marginal costs of the competitive component justify a higher interconnection charge under the Baumol-Willig rule. This higher interconnection charge will deter even rivals that are more efficient than the monopolist in the production of the competitive product.

D.9 Telecom has in fact already successfully transferred a portion of the "cost" of its agreement with its shareholder to restrict residential tariffs to new entrants through interconnection charges. These interconnection charges in practice have been generally based on business rates which include a significant contribution to Telecom's agreement with its shareholder, to which is added an additional contribution to joint and common costs. Business rates have been applied regardless of the type of service being offered by the interconnecting network operator, including residential services.

D.10 Telecom has therefore been able to use its agreement with its shareholder to restrict residential tariffs in a manner which protects its residential services from competition from new entrants through artificially high interconnection charges which are not applied to its own residential services.

D.11 One result of this agreement is that it does not directly benefit business customers. On the contrary, Telecom has said that business rates in fact contribute to what it says are its "costs" of this agreement. On this basis, therefore, the "obligation" is admitted by Telecom to be a constraint on business pricing. Telecom's agreement with its shareholders to restrict residential tariffs is therefore a distortion.

D.12 However, it is not only in the business part of the market that this agreement is a distortion. In fact, the major portion of the theoretical benefit of the "obligation" is derived by rural residential customers. Telecom's agreement with its shareholder to restrict residential tariffs is thus likely to be a distortion in the urban residential market. Telecom has chosen to provide only extremely limited residential pricing options other than the current price calling option combined with a line rental which, by virtue of the terms of its agreement with its shareholder, will probably never decrease unless competition evolves in this market. Overseas experience shows that, if Telecom was not bound by this agreement, it is likely that basic local service prices would be

64 See paragraph 221 of the Discussion Paper.

declining in real terms, reflecting the declining unit cost of the industry. This suggests intuitively that in the lower cost sector of the urban residential market, at least, no "obligation" exists today.

D.13 Telecom's agreement with its shareholder to restrict residential tariffs is most likely a price floor and not a price ceiling. It is therefore possible that Telecom receives more revenues as a result of this agreement than it would in its absence. It has not been demonstrated, and other network operators doubt, that this agreement is in fact an "obligation". In all likelihood, the only place where it imposes an obligation on Telecom is in rural areas where non-traffic sensitive costs generally outweigh the costs that can be recovered from consumers under this agreement.[65]

Recovery of any "cost" through interconnection charges

D.14 *Only if Telecom were subject to a mandatory disclosure regime requiring it as the dominant incumbent and as the party bound by the agreement to restrict residential tariffs to disclose each relevant contribution element for every economically distinct residential and business market and service will fellow network operators and Government be able to observe what should happen in a competitive market.* On the basis of this disclosure regime, therefore, to the extent that this agreement does in fact impose an observable "obligation" in any economically distinct residential or business market or service, then *that "obligation" should be recovered by Telecom by way of the interconnection charge payable in respect of that distinct market or service.*

D.15 Under the access pricing principles of reciprocity and non-discrimination, Telecom should therefore charge an interconnecting network operator an interconnection charge, in relation to a network service where there is in fact an observable "cost" applicable to Telecom's agreement with its shareholder to restrict residential tariffs, an amount which it charges itself and other network operators for the same network service.

D.16 This disclosure obligation should apply only for so long as Telecom is the dominant incumbent and the agreement to restrict residential tariffs exists. That is, this disclosure obligation is simply an incident of dominance and of the nature of Telecom's agreement with its shareholder.

Nature of disclosure regime

D.17 Section 5C of the Telecommunications Act 1987 today contains provisions enabling the Secretary of Commerce to require Telecom, "for the purpose of facilitating effective competition in the supply of telecommunications goods and services", to publish and disclose information "in relation to the supply of prescribed telecommunications goods and services and prescribing the information, including prices, terms, and conditions, that [Telecom] shall make available". In this context, the Telecommunications (Disclosure) Regulations 1990 and the so-called Telecom List of Charges are at present wholly inadequate to enable the appropriate disclosure of information. Nevertheless, this legislation contains a form of statutory mechanism for the introduction of an appropriate regulatory disclosure regime.

65 These issues are subject to comprehensive review in David Gabel, "Pricing voice telephony services: Who is subsidising whom", Telecommunications Policy, Volume 19, No.6, August 1995, pp 453-464.

D.18 In order for any observable "obligation" of the Telecom's agreement with its shareholder to restrict residential tariffs to be recovered by Telecom by way of appropriate interconnection charges, this disclosure regime needs to be comprehensive. The nature and extent of this disclosure is discussed in part 7 of these Submissions.

Necessity for an auditor

D.19 In some circumstances, it may be necessary for an independent auditor to audit and verify the disclosure made by Telecom pursuant to this disclosure regime. In these circumstances, the cost of the auditor should be shared between the network operator requesting the audit and Telecom. However, if the auditor determines that Telecom has not in fact made appropriate disclosure, there should be power to require Telecom to meet all of the auditor's costs.

D.20 In any case, the process should allow any affected network operator to provide its own estimates of the nature and extent Telecom's agreement with its shareholder to restrict residential tariffs in the relevant circumstances. This process allows a network operator which has its own expertise on the matter to submit data to the auditor.

APPENDIX E

The Gatekeeper

E.1 The Discussion Paper[66] analyses in some detail, in the context of network industries other than telecommunications, whether some sort of "gatekeeper" is required in order to decide when and to what extent any access pricing regime which is invoked in the telecommunications industry should apply to another network industry. The Discussion Paper says[67] that any access pricing:

> regime is unlikely to be appropriate for all access disputes. Therefore, some sort of "gatekeeper" is required. The "gatekeeper" would decide when and to what facilities the access pricing regime would apply.

E.2 This analysis in the Discussion Paper proceeds to some extent on the assumption that a "particular access pricing rule" is appropriate in the telecommunications industry[68]. As BellSouth indicates in these Submissions, it does not believe that access pricing principles should be included now in a change to the Commerce Act. To do so now would involve the risk of regulatory failure.

E.3 Instead, the access pricing principles discussed in Appendix B to these Submissions should form the proper guidelines for negotiation and, if necessary, arbitration relating to the complementary network services. It is better that the principles form the basis of negotiation and arbitration. In particular, the arbitration process should assist the parties to an arbitration to identify clearly the issues upon which they disagree. The certainty that the arbitrators will choose one or other set of the pricing principles proposed by the parties should result in the parties moving toward common ground.

E.4 There is no therefore no justification for any gatekeeping role to be performed once the arbitral regime has been established for the purposes of deciding when, and what kinds of, dispute are subjected to the regime. There are five key reasons for this:

- an important characteristic of a light-handed regulatory regime is the right of parties in dispute to resort to dispute resolution procedures of their own choice
- arbitrators' availability is not a reason for passing business decisions of the kind described in the previous sub-paragraph to a gatekeeper
- since the proceedings and operations of the arbitral regime should be at the expense of the disputants the taxpayer will not be called upon to establish and fund the arbitration regime in any significant way, and certainly not on an uncontrollable basis
- disincentives can be included in the arbitral regime to discourage disputants from taking frivolous, vexatious or weak cases before the arbitrators

66 See paragraphs 230-253 of the Discussion Paper.
67 See paragraph 233 of the Discussion Paper.
68 See paragraph 230 of the Discussion Paper.

- it would be risky and inconsistent with the current light-handed regulatory regime for a new or existing institution to be used as a gatekeeper

E.5 The use of a new or existing institution as a gatekeeper is a poor policy option because:

- the institution will require funding on a continuous basis, presumably by the taxpayer so as to avoid undue influence
- it would be inappropriate to add work of this importance to the work of an existing body, especially within existing funding constraints
- there is a significant risk that the gatekeeper will be captured by industry participants and issues
- the arbitrators are best placed to determine whether or not a dispute should be arbitrated since the arbitrators can be expected to be experts, chosen on an industry-specific basis and able to draw on relevant expertise so as to reduce, to some extent at least, information asymmetries
- since the arbitrators will work only on specific arbitrations it will be more difficult than in the case of a continuing body for undue influence to be exercised

E.6 On this basis, therefore, there is no need to design a regulatory institution such as a Gatekeeper in the telecommunications industry. There are no access pricing rules to be regulated in the telecommunications industry. The arbitrators who are appointed as part of the compulsory two-part arbitration process are, in effect, the de facto "gatekeeper". However, this de facto "gatekeeper" is a different Gatekeeper from the one envisioned by the Discussion Paper. It is not a regulator, a Court or the Government.

E.7 In summary, these Submissions have focused on the telecommunications industry. In doing so it is clear that in due course policy makers may need to renew the appropriateness of a Gatekeeper in other network industries in the context of a further review of policy and access pricing principles in those industries. Today, however, the issue of the appropriate regulatory institutional design does not need to be considered.

APPENDIX F

Other network industries

Focus on telecommunications industry

F.1 BellSouth's policy is to take a constructive approach to and to seek to make a significant and positive contribution to the debate on competition policy and the regulatory regime for telecommunications. This has included extensive international primary research on these issues to ensure that BellSouth's contribution is academically sound and commercially robust.

F.2 The basic thrust of these Submissions is that today's light-handed regulatory regime is failing to produce the conditions required for effective competition in the telecommunications market because there is no effective means of constraining anti-competitive behaviour by the dominant incumbent and of resolving disputes and, in addition, because there is insufficient quality information available to enable other network operators to negotiate access arrangements with the dominant incumbent and to enable legal redress if necessary.

F.3 There is therefore a need to address these problems with the market process in the telecommunications industry. The main changes should be:

- a compulsory arbitral regime to create an effective means of resolving disputes between network operators in the telecommunications industry
- broad economic principles to guide network operators and arbitrators
- a more effective information disclosure regime which applies to Telecom for as long as it is the dominant incumbent

F.4 These Submissions focus on the telecommunications industry for four key reasons:

- this has been the focus of BellSouth's analysis of the issues and it is the only industry on which it is qualified to speak with any authority
- the potential welfare gains from competition and innovation in telecommunications are very large
- experience from the analysis of the telecommunications industry is of vital importance because it is the only major network industry in which light-handed regulation has operated for any length of time
- these issues are specific to telecommunications, which presently of all network industries has the potential to be most competitive

Arbitration for other network industries

F.5 Nevertheless, the issues discussed, and the solution and policy blueprint proposed, in these Submissions obviously have considerable relevance and significance for other

network industries. In particular, some consideration has been given as to whether a general arbitral regime should be provided for in respect of other network industries. BellSouth assumes that a proposal to create an arbitral regime of general applicability would be subject to further consultations.

General arbitral regime

F.6 Facilitative provisions could be included in the Commerce Act providing for the establishment of an arbitral regime in prescribed circumstances. It is not, however, appropriate to design in advance the regime that might apply to particular network industries. Nevertheless it is important that each such regime have certain common features:

- it needs to be established only when there is, or when there is a reasonable anticipation of, a need to enhance market processes in a network industry
- each regime should be designed to take account of the specific circumstances of the industry to which it relates
- principles that are consistent with the overriding principles of the Commerce Act should be established on an industry-specific basis, but, to the extent possible, not on a prescriptive basis, to guide dispute resolution according to the arbitral regime
- once established, the arbitral regime has compulsory application to industry participants involved in disputes and may be invoked by either disputant
- there should be rights of joinder and consolidation of issues
- there should be provision for a strict timetable to be established and enforced
- the arbitrators should have the right to compel the attendance of the parties and witnesses and the production of evidence
- the arbitrators' decision should be final and binding and rights of appeal should be strictly limited

F.7 It is necessary:

- to determine when and in what circumstances an arbitral regime should be designed
- provide for its design
- provide for it to be brought into law

F.8 These three functions should be separated so as, on the one hand, to place the responsibility for the performance of the function in appropriate hands and, on the

other hand, to give the opportunity to market participants to invoke the procedure if a case can be made for it.

F.9 Thus, BellSouth suggests the following steps:

- the process for the design of an industry-specific arbitral regime and for the preparation of relevant broad industry-specific principles may be commenced either as a result of a Court order or at the instance of the relevant Minister, presumably the Minister of Commerce

- in so far as a Court is involved, a Court order could only be made where a Court is convinced that there is a need to enhance market processes, or there is a perceptible risk of a need to enhance market processes by virtue of the structure of a particular network industry or the existence in that industry of a dominant incumbent or incumbent with particular scale or scope has meant that access to the network is being denied, or the terms and conditions of access to the network are unreasonable, or likely to be unreasonable with the result that national welfare benefits are being forgone or are less than they would be were those characteristics not present.

F.10 It must also be shown that bringing an arbitral regime into effect is capable of providing positive economic efficiency and welfare benefits net of distortion and transaction costs

F.11 The effect of a Court order or a Ministerial direction will be for the Minister to establish, and fund, a panel of independent experts who will:

- consult as they consider necessary to perform their function

- design an arbitral regime for dispute resolution having regard to the principles described in paragraph F.6

- resolve the broad principles which are to apply in respect of that arbitral regime

F.12 The panel is an ad hoc body established from time to time as necessary. A timetable for the performance of its functions by the panel will be required. This panel would report to Parliament. The report would be considered by the relevant Select Committee and that Committee would be empowered to introduce the details of the relevant arbitral regime as a Bill into the House.

F.13 It is important that the arbitral regime is introduced only if and when necessary. It is important the Government retains the power to institute the steps towards creating an arbitral regime when it considers that national interest considerations, including its economic policy, require. Similarly, a Minister will be in a position to act even if a Court is not convinced that it has the authority in a particular case to make the relevant Court order.

F.14 The provision of the Court order provides an opportunity for an industry participant to have steps towards a regime initiated if that participant considers that worthwhile. However, it is important that the steps cannot be taken lightly and that the burden of

proving the case falls on the proponent. A Court is an appropriate body to consider such issues since:

- proof and evidential standards are high
- a Court is probably less subject to undue influence than any other body that might be used and does not itself have a rent-seeking stake in the industry (this is particularly important as a decision to make an order may commence an effective re-allocation of wealth among industry participants)
- Courts are reasonably used to making decisions of this kind (and may be assisted by a lay assessor in doing so)
- the decision whether or not to make an order is of a kind that a Court is capable of making in that it requires no further enforcement or policing
- notwithstanding that an order is made, it does not follow that an arbitral regime will necessarily come into effect - whether or not that is the case is a decision that will be made or influenced by the panel, the Minister and Parliament

F.15 An ad hoc panel rather than an existing institution should be used to make the relevant recommendations to Parliament for a number of reasons:

- an ad hoc panel will not require funding on a continuous basis (indeed it may be possible for industry participants (or industry customers) to be charged so as to recover the costs of the panel)
- it would be inappropriate to add work of this importance to the work of an existing body, especially with any existing funding constraints. The work will be required to be of a very high standard and to be delivered quickly
- the panel can be established on an industry-specific basis drawing on appropriate expertise in reducing, to some extent at least, information asymmetries
- since the panel will be dis-established once it has done its work, it will be more difficult than in the case of an existing and continuing body for undue influence to be brought upon it
- the panel will in effect be accountable to Parliament for the performance of its duties and its report will be a public document

F.16 The Parliamentary process will provide:

- an opportunity for a full consideration of Government economic policy and of other national interests
- an opportunity for further lobbying and for refinement of any suggested regime

- a check against undue influence in as much as:
  - the delivery of the report will tend to provide motivation and momentum to Parliament
  - Parliament will be in a position to counter undue influence on the panel
- appropriate status for any arbitral system that follows from the delivery of the report by virtue of the passage of legislation

APPENDIX G

Standards

Background

G.1 One of the remarkable achievements of the global telephony system is that anyone with a telephone can call anyone else in the world with a telephone. This achievement comes about because of the interconnection of hundreds of autonomously operated telephone networks around the world. This global interconnection of telephone networks has only been made possible through technical standards that have been agreed internationally and committed to by almost all countries.

G.2 In the past, and largely for historical reasons, within countries there has tended to be a single telephone network operation, a monopoly usually owned by the government of that country. This operation was usually also empowered with administering telecommunications nationally. It would set technical national standards, represent the country at international standards forums and otherwise administer telecommunications internationally. This has tended to result in the development of international technical standards which have focused on:

- standards applying within a network (i.e., primarily to enable the interoperation of different equipment vendors)
- standards applying to customer premises equipment (i.e., to ensure the satisfactory operation of telecommunications end-to-end)
- standards applying to the international connection of national telephone networks

G.3 The interconnection of separately operated telephone networks within the same country has not, and continues not to be, addressed at international standards forums. This is mainly because such forums tend to be dominated by "traditional" administrators who have little interest in, or in some cases actively oppose, progressing such standards.

G.4 Telecommunications services and features available within a national telephony network tend to be much richer than the services and features available internationally between countries. International standards for the interconnection of national networks tend to be featureless, supporting little more than basic call set up and release.

G.5 Most telephone networks are capable of supporting many services over and above basic call connections. For example:

- call forwarding (call diversion)
- calling line (number) presentation

- freephone (0800) calling
- closed user groups (virtual private networking)
- centrex (central exchange service)
- Integrated Service Digital Network (ISDN)
- local number portability
- Personal Communication Services (PCS)

G.6 In general, for such services to interoperate seamlessly between networks (interoperation is a fundamental concept in a network of networks) there must be appropriate functionality and information flow to be supported within and over the interconnection between the networks.

G.7 A telecommunications network can be partitioned into different functional levels. These functional levels include:

- management (network and service management)
- databases (holding customer and service information)
- service logic (actual software for supporting services)
- switching (provides the basic capabilities for switching and transmission)

G.8 Basic call set up and release and some of the less complex services such as call forwarding and calling line (number) presentation require information flow at only the switching functional level. It is at this level where much of the international standards effort has concentrated, and hence these standards tend to be reasonably well developed, albeit usually with many options. However, the more complex services, such as virtual private networking and number portability, require information flows at all four functional levels. Standards at the management, database and service logic levels tend to be considerably less well developed, and hence many networks have implemented proprietary or at least partly proprietary solutions at these levels.

G.9 The support of the interoperation of services (particularly the more complex services) between networks results in a set of requirements which have not in general been addressed by standards. The standardisation of such requirements is not seen as being particularly necessary when such services are implemented within a single network, and hence have not been actively progressed. Requirements which tend to be unique to the interoperation of services between networks (i.e., network of networks) include:

- the seamless interoperation of services between networks
- mediation functions required to maintain each network's integrity

- the requirement to interconnect and interoperate networks at "higher" (i.e., management, database and service logic) functional levels, over and above the basic switching functional level

G.10 To consolidate the above, consider an example of the interoperation of a service between two networks, which is not presently possible in New Zealand today but would likely be of considerable benefit to customers. Consider a business which has wireline telephones (connected to a private branch exchange (PBX)) and which also has mobile phones. The PBX is connected to one network operator and the mobile telephones are connected to a different network operator. The business may have a desire to include the mobile telephones into the PBX extension numbering plan (that is, from the mobile phone, a four digit extension number is dialled to call a PBX wireline phone and the mobile phone can be called by dialling a four digit extension from the PBX wireline phone). For this service to operate between the two networks, there must be common management of the extension number databases in the two networks and information flow between the service logic functional levels in each network. Complete standards for achieving this are not presently available. However, a mixture of proprietary and existing standards could be developed to allow such interoperation to be realised in New Zealand relatively quickly.

Existing interconnection specifications

G.11 Telecom has by far the largest network in terms of the number of customers connected to it. New entrant network operators have little option but to directly interconnect with Telecom. Telecom only allows interconnection in accordance with its own specifications. Telecom has developed four specifications which cover interconnection of networks, these are:

- PTC 300 General requirements for network interconnection
- PTC 301 Telephone network interconnection by means of the R2MFC (multichannel frequency compelled) channel associated system
- PTC 331 Telephone network interconnection using Signalling System No. 7
- PTC 332 Local network interconnection (draft)

G.12 These specifications are based on the ITU-TS (International Telecommunications Union - Telecommunication Sector) recommendations. The Telecom set of interconnection specifications are entirely limited to the switching functional level and support basic call set up and release functionality. Until recently, no end-user services other than basic call set up and release functionality were supported in the specifications. A recent amendment by Telecom to the specifications now fully supports call forwarding. It is noteworthy that call forwarding has been fully defined in the ITU-TS recommendations since 1988 but only now included in the Telecom specifications.